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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,728	04/04/2001	Tomohito Kunda	15-7	1763

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EXAMINER

BELLAMY, TAMIKO D

ART UNIT	PAPER NUMBER
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2856

DATE MAILED: 03/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/824,728

Applicant(s)

KUNDA, TOMOHITO

Examiner

Tamiko D. Bellamy

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 9-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Applicant's cancellation of claims 7 and 8 in Paper No. 8 is acknowledged.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6, 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahara (6,323,529) in view of Yoshihara et al. (6,245,593).

With respect to claims 1 and 9, Nagahara does not clearly disclose a semiconductor sensor chip connected to the substrate via an adhesive film (cl. 1), and the film located between the substrate and the sensor chip (cl. 9). However, Nagahara discloses in Figs. 1 and 2 an acceleration sensor chip 3, and a signal-processing chip 5 for calculating acceleration (col. 3, lines 45-53), the acceleration sensor chip 3 has a three-layer structure of glass-silicon-glass; and the signal-processing chip 5 is mounted on the acceleration sensor chip 3 (col. 3, line 54-57). The glass portion between the signal processing chip 5 and the acceleration sensor chip 3 is a type of bonding agent to connect the signal-processing chip 5 and the acceleration sensor chip 3 together. Yoshihara et al. discloses the invention applied to several acceleration chips 100 (col. 3, line 25), and an adhesive sheet 2 (col. 3 line 47). The adhesive sheet 2 is inherently an adhesive film as claimed. It would have been obvious at the time the invention was made to a person

having ordinary skill in the art to use Nagahara according to the teachings of Yoshihara et al. to test sensor chip that is connected to a substrate via an adhesive film, and placing the film between the substrate and the sensor chip as the system of system of Nagahara would operate equally well on either tested structure. Evidence of this can be found in Nagahara, which discloses the signal-processing chip 5 is mounted on the acceleration sensor chip 3 (col. 3, line 54-57).

With respect to claims 2 and 10, Nagahara discloses wherein the substrate 5 is a semiconductor chip having a circuit for processing the sensor signal (col. 3, lines 45-53), and the acceleration chip 3 is connected to the first surface of the semiconductor chip 5, and a second surface of the semiconductor chip 5 connected to the package case 2.

With respect to claims 3 and 11, Nagahara does not specifically disclose the adhesive film is made of thermosetting resin or a thermoplastic resin. Nagahara does mention that the sensor chip has a three-layer structure of glass-silicon-glass (col. 3, lines 54-56). Yoshihara et al. discloses an adhesive sheet 2 composed of a flat sheet 2a and adhesive 2b (col. 3, lines 47-50), the sheet member 2a is made of polyolefin family of resin; and the adhesive 2b is made of UV setting resin such as acrylic (col. 3, lines 45-56). The adhesive sheet 2 is inherently an adhesive film. As well known in the art, a resin made of polyolefin is a type of thermoplastic resin. Therefore, the sheet member 2a made from polyolefin family of resin is inherently a thermosetting resin. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use Nagahara according to the teachings of Yoshihara et al. to test sensor chip that is connected to a substrate via an adhesive film that is made of thermosetting resin as the

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system of Nagahara would operate equally well on either tested structure. Evidence of this can be found in Nagahara, which discloses the signal-processing chip 5 is mounted on the acceleration sensor chip 3 (col. 3, line 54-57).

With respect to claim 4, Nagahara lacks the detail of the thickness of the adhesive film is less than 50  $\mu\text{m}$ . Yoshihara et al. discloses the invention applied to several acceleration chips 100 (col. 3, line 25), and an adhesive sheet 2 (col. 3 line 47). Although Yoshihara et al. does specify the thickness of the adhesive sheet the thickness is a design choice. A change in the size of a prior art device is a design consideration within the skill of the art. In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use Nagahara according to the teachings of Yoshihara et al. to test sensor chip that is connected to a substrate via an adhesive film wherein the thickness of the adhesive film is less than 50  $\mu\text{m}$  as the system of Nagahara would operate equally well on either tested structure. Evidence of this can be found in Nagahara, which discloses the signal-processing chip 5 is mounted on the acceleration sensor chip 3 (col. 3, line 54-57).

With respect to claim 5, Nagahara lacks the detail of an elasticity coefficient of the adhesive film is less than 3,000 mega Pascal. Yoshihara et al. discloses an adhesive sheet 2 composed of a flat sheet 2a and adhesive 2b (col. 3, lines 47-50), the sheet member 2a is made of polyolefin family of resin. The optimization of proportions in a prior art device is a design consideration within the skill of the art. In re Reese, 290 F.2d 839, 129 USPQ 402 (CCPA 1961). ). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use Nagahara according

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to the teachings of Yoshihara et al. to test sensor chip that is connected to a substrate via an adhesive film wherein the elasticity coefficient of the adhesive film is less than 3,000 mega Pascal as the system of Nagahara would operate equally well on either tested structure. Evidence of this can be found in Nagahara, which discloses the signal-processing chip 5 is mounted on the acceleration sensor chip 3 (col. 3, line 54-57).

With respect to claim 6, Nagahara discloses a semiconductor sensor chip 3 for sensing acceleration (col. 3, line 51).

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection. It is the examiners position that claims 1-6, and 9-11 are not patentable over the newly applied art of Nagahara in view of Yoshihara et al.

### ***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamiko D. Bellamy whose telephone number is (703) 305-4971. The examiner can normally be reached on Monday through Friday 8:30 AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

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Tamiko Bellamy

<sup>T.B.</sup>  
March 6, 2003

HELEN KWOK  
PRIMARY EXAMINER

A handwritten signature in cursive script, appearing to read "Helen Kwok", written in black ink.